

ABSTRACT OF THE DISCLOSURE

A device for measuring the flux received by a specimen in fire test apparatuses has a copper disk or plate of the same dimensions and the same type of surface coating as a typical material specimen, an embedded heating coil and thermocouple, and an insulated sample holder similar to that used for a specimen. The transient response of the embedded thermocouple is measured for several different levels of imposed incident radiation without electrical heating and for several different known levels of electrical heating without any imposed radiation. The principle of Electrical Substitution Radiometry (ESR) is applied, and the transient responses to incident radiation and electrical heating under identical thermal conditions are compared to determine the amount of incident radiation that is actually absorbed by the device while it is being irradiated. The situations are kept thermally identical, thereby insuring that all effects due to heat losses (e.g. convection, radiation and conduction) are exactly the same.